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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,818	03/29/2004	Cheuh-Ju Chen		5045

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EXAMINER	
CHIEN, LUCY P	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/812,818	CHEN ET AL.	
	Examiner	Art Unit	
	Lucy P. Chien	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 5-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 5-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to **claim 1,5-15** have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1,14,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 5949511) in view of Shimoshikiryo et al (US 6130739).

Regarding Claim 1,

Park discloses (Figure 4a) a first substrate (111) and a second substrate (110) disposed oppositely and spaced apart from a predetermined distance. A liquid crystal layer (119) interposed between the first substrate (111) and the second substrate (110). A plurality of common electrodes (106a) and pixel electrodes (105a) formed on the first substrate (111) parallel to each other and a plurality of conductive spacers (130) formed on the common electrodes (106a) and the pixel electrodes (105a).

Park et al does not disclose wherein each of the spacers comprises a spacer rib having a form of a parallelpiped, and a conductive film provided on all surfaces of the spacer rib.

Shimoshikiryo et al discloses the spacers as parallelpiped such that the spacer creates a transverse field across the length of the pixel electrode and common electpde (Figures 6-8 elements 603 and 604). Also,(Figure 7) a conductive film (3) is provided on all surfaces of the spacer rib (9a, 9b).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacers disclosed by Park to be parallelpiped as one would have been motivated to shape the spacers as taught by Shimoshikirm to benefit from a lower driving voltage due to a higher transverse electric field strength (Column 28 lines 21-40). A lower driving voltage would have been beneficial to increase the driving efficiency of the display.

Regarding Claim 14,

In addition to Park and Shimoshikiryo et al disclosed above, Park Park discloses (Figure 4a) an alignment film (121a) formed the second substrate (110) and another alignment layer (121b) formed on the first substrate (111).

Regarding Claim 15,

In addition to Park and Shimoshikiryo et al disclosed above, Park Park discloses (figure 4a) a color filter (117) formed on an inner surface of the second substrate (111) facing the liquid crystal layer (119).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 5,6,8,10,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 5949511) and of Shimoshikiryo et al (US 6130739) in view of Morri et al (US 6141078).

Regarding Claim 5,

Park and Shimoshikiryo et al do not disclose the spacer rib is made of glass.

Morri et al discloses (Column 8,Row 20-27) the use of glass spacers because it is effective in achieving a desired dimensional accuracy.

It would have been obvious to one of ordinary skill in the art, at the time when the invention was made to modify Park's display and Shimoshikiryo et al to include Morri et al's glass spacer in order to achieve a desired dimensional accuracy. (Morri et al, Column 8,Row 20-27)

Regarding Claim 6,

In addition to Park, Shimoshikiryo et al and Morri et al as disclosed above, Park nor Morri et al does not disclose the glass spacer to made of SiO2. It is known that silicon dioxide is a common component to construct glass. Thus, it would have been obvious to one of ordinary skill in the art, at the time when the invention was made to have the glass spacers made of SiO2.

Regarding Claim 8,

In addition to Park, Shimoshikiryo et al and Morri et al as disclosed above, Morri et al also discloses (Column 1, Row 61-67) the conductive film is made of metal which is a good conductor.

Regarding Claim 10,

In addition to Park, Shimoshikiryo et al and Morri et al as disclosed above, Morri et al also discloses (Column 11, row 9-13) the substrates being made of Glass used to define and maintain a distance between substrates and this determines the thickness of the liquid crystal layer.

Regarding Claim 13,

In addition to Park, Shimoshikiryo et al and Morri et al as disclosed above, Morri et al also discloses in figure 2 a polarizer(5) formed on one side of the first substrate (1) and another polarizer (6)on one side of the second substrate (4).

Claim 7,9,11,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 5949511) and of Shimoshikiryo et al in view of Matsumoto (US 6657699).

Regarding Claims 7 and 9,

Park and Shimoshikiryo et al do not disclose the conductive films such as the common electrodes and pixel electrodes are made of ITO.

Matsumoto teaches the conductive films to be made of ITO. (Column 20, lines 40-46; Figure 26 (9c)).

It would have been obvious to one of ordinary skill in the art, at the time when the invention was made to modify Park's display and Shimoshikiryo et al to include Matsumoto's conductive films made of ITO which is a common material it is used because it is a good conductor.

Regarding Claim 11,

In addition to Park, Shimoshikiryo et al and Matsumoto as disclosed above, Matsumoto discloses in

Figure 8 an insulating film (4) disposed between the common electrode (3) and the pixel electrode (7).

Regarding Claim 12,

In addition to Park, Shimoshikiryo et al and Matsumoto as disclosed above, Matsumoto discloses in (Column 9, Row 56-66) the insulating film made of Silicon Oxide.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy P. Chien whose telephone number is 571-272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucy Chien
Examiner
Art Unit 2871
LC

ANDREW SCHECHTER
PRIMARY EXAMINER